

REMARKS

Reconsideration of this application as amended is requested. By this amendment Applicant has amended Figs. 1-3, 4a and 6 of the drawing, and has amended claims 1 and 3-10 for clarity. Claims 1-10 remain in the case.

The Examiner objected to the drawing due to various informalities, namely some missing numerals and lack of descriptive labels. Applicant has added the missing numerals in Figs. 3 and 5, and has added descriptive labels in Figs. 1, 2, 4a and 6. Applicant submits that duplicating labels for the same nomenclated element in subsequent Figs. is not necessary. Therefore the Examiner's objection to the drawing is now deemed to be moot.

The Examiner objected to the specification at page 2 because of a perceived informality. Applicant submits that there is no need for correction because "use" is what was intended by Applicant, not "user" as suggested by the Examiner. Therefore no amendment to the specification is required.

The Examiner objected to and rejected claims 1-10 under 35 U.S.C. 112, second paragraph, due to informalities and as being indefinite. Applicant has amended the claims to remove the perceived informalities and ambiguities. Specifically claim 1 recites "testing a communication system that is subdivided into functional layers" to differentiate from "communication directly with a layer". Further claim 1 now recites that the layer is "higher than a first layer of the functional layers" to provide antecedent basis for the subsequent recitation of "first layer." Claim 3 is amended to put the language in better form. Claims 4 and 5 are amended to avoid any antecedent problem for "processing" and to correct an obvious grammatical omission (claim 5). Claim 6 has been amended to be approximately in conformity with the similar amendments to claim 1, and refers to the data from the outputting

step as "response data." Claim 7 then recites the data for the inputting step is "test data", and claims 8-10 are amended accordingly to conform to the amendments in claims 6 and 7. Thus claims 1-10 are now deemed to be definite as particularly pointing out and distinctly claiming for one of ordinary skill in the art the subject matter that Applicant regards as the invention.

The Examiner rejected claims 1-3 and 6-10 under 35 U.S.C. 102(b) as being anticipated by Autrey et al ("Autrey"), and claims 4 and 5 under 35 U.S.C. 103(a) as being unpatentable further in view of Warren. Applicant respectfully traverses these conclusions by the Examiner.

Applicant's claimed invention is an arrangement whereby a protocol layer from a multilayer protocol stack, such as the OSI reference model of related functions that are needed at each end of a communication when a message is sent from one party to another party in a network, may be tested without the communication having to pass through the physical layer, i.e., a first layer. The present invention allows a protocol tester or test apparatus to directly access any layer above the first layer and communicate solely with that layer by providing test data to that layer and receiving response data from that layer. In other words the circuit or apparatus for testing a communication system has a port that allows communication by the test apparatus directly with any layer that is higher than the first layer of the functional layers that make up the communication system. Applicant's claimed invention is based on a different observation that a set of different physical interfaces have to be provided for protocol testers. These interfaces may be expensive, such as high bandwidth optical interfaces. However protocol testers typically do not provide physical layer testing. Therefore for the purposes of the present invention it is sufficient to connect a protocol tester to an internal interface of a real device under test, such as a Utopia interface for testing an ATM environment

or a POS-PHY interface. Such a test interface for protocol testers avoids an expensive physical interface. Thus such a test interface may be integrated into communication chips as network processors or switching engines.

In contradistinction to Applicant's claimed invention Autrey provides a protocol interface gateway for connecting an emulator to a network. Although Autrey at first glance may appear similar to Applicant's claimed invention, Autrey basically describes how a computer that is used to simulate new communication equipment is integrated into a communication network. For that purpose an Ethernet connection is used to connect the computer to a counterpart that emulates the behavior of a communication network. The protocol messages of a given layer are encapsulated in TCP/IP packets and transferred to the computer that emulates the network. With this solution the two communication partners exchange messages down to one specific layer in the OSI model – layer 3. The lower layers, required within a real communication network, are not relevant here as they are replaced by the layers of the Ethernet connection. Alternatively the simulation computer is connected to a media gateway that connects the simulation computer with a real communication network. Here the lower layers are required. To use the same approach as described above an additional piece of hardware is required – the so-called “media gateway” that provides a link between the Ethernet connection and the communication network (an OC-3 network in this case). The task of the media gateway is to unpack the messages received on the Ethernet port and to provide the lower layer functionality required for the real communication network.

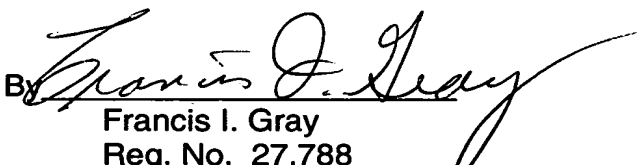
Applicant is amended claims 1 and 6 recites that the circuit for testing a communication system – not simulating or emulating – has a port (32) that allows communication by a test apparatus directly to any layer (levels 2-7) above the physical layer (first level). Autrey only teaches communication between simulator

and emulator/physical device at level 3, not *any* level as recited by Applicant. The result is that the present invention allows normal communication to occur on the communication network – testing of a real communication network, not an emulated network. Thus claims 1 and 6 are deemed to be allowable as being neither anticipated nor rendered obvious to one of ordinary skill in the art by Autrey.

In view of the foregoing amendment and remarks allowance of claims 1-10 is urged, and such action and the issuance of this case are requested.

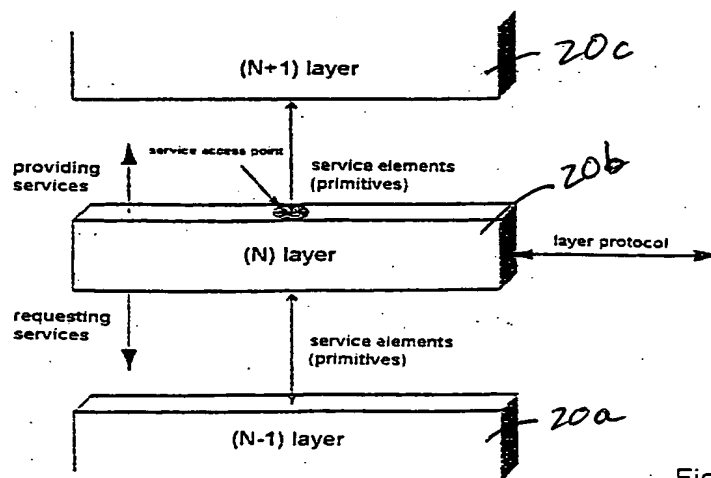
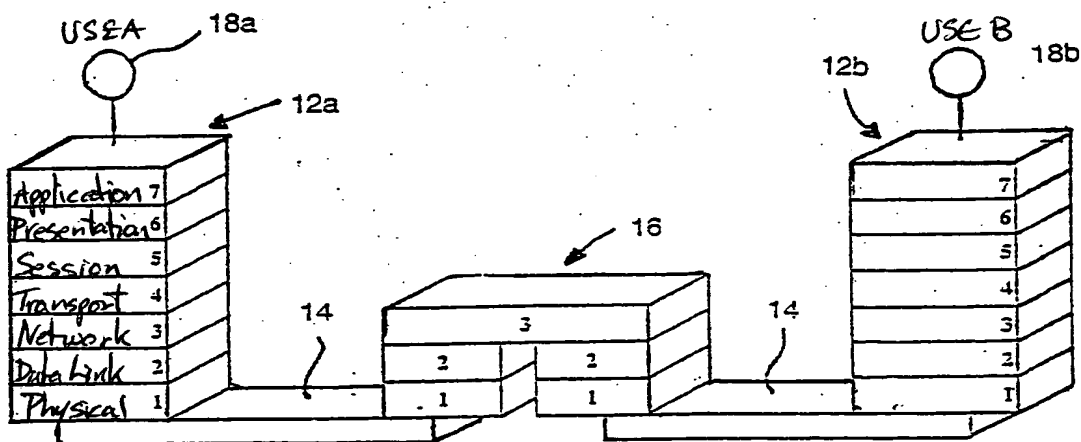
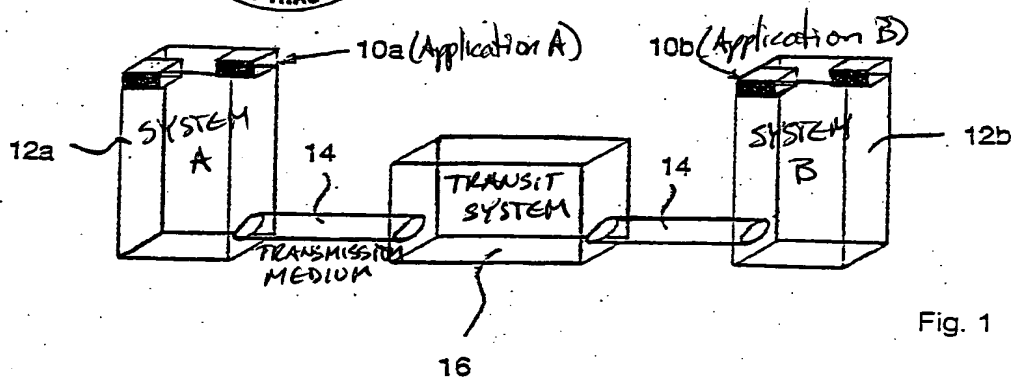
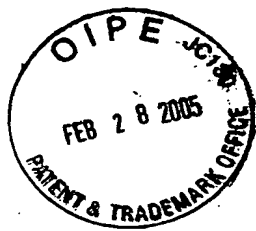
Respectfully submitted,

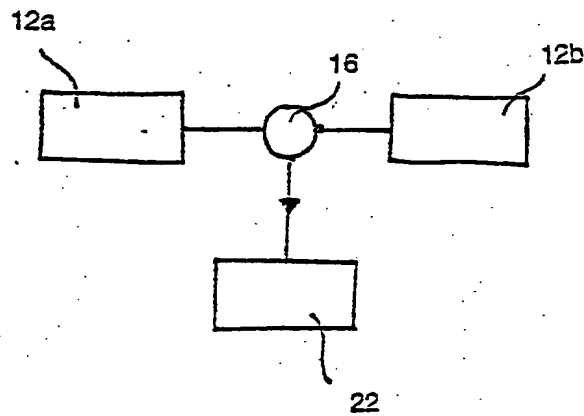
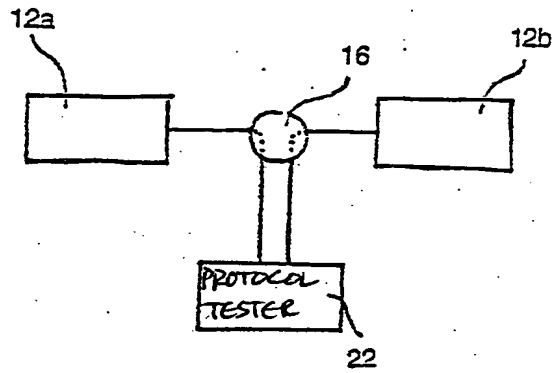
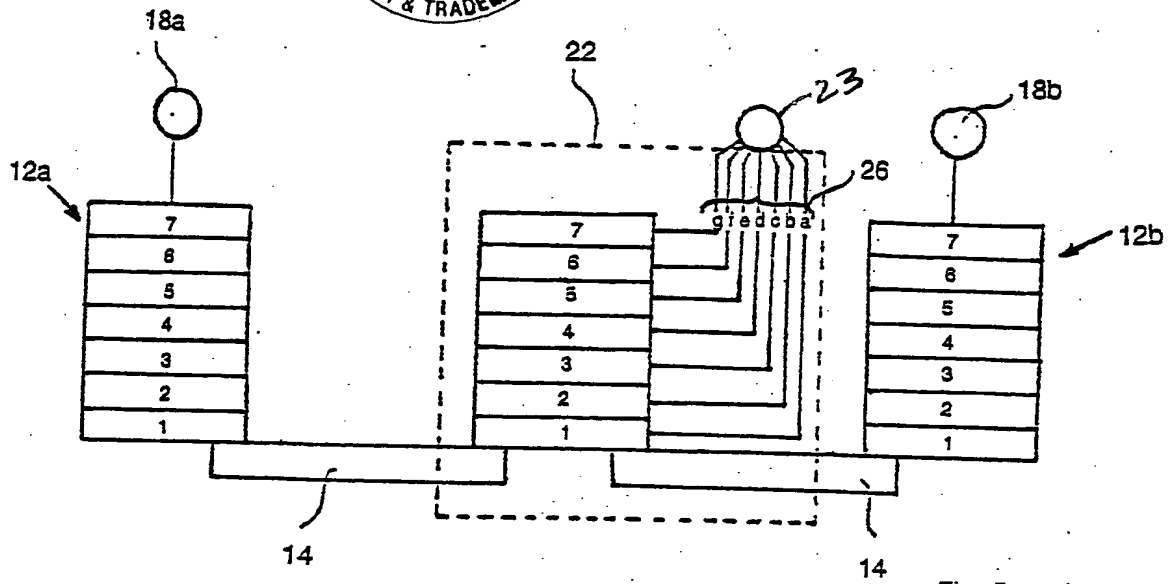
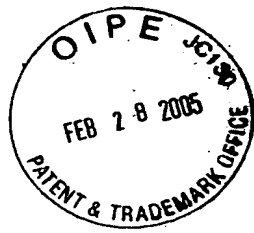
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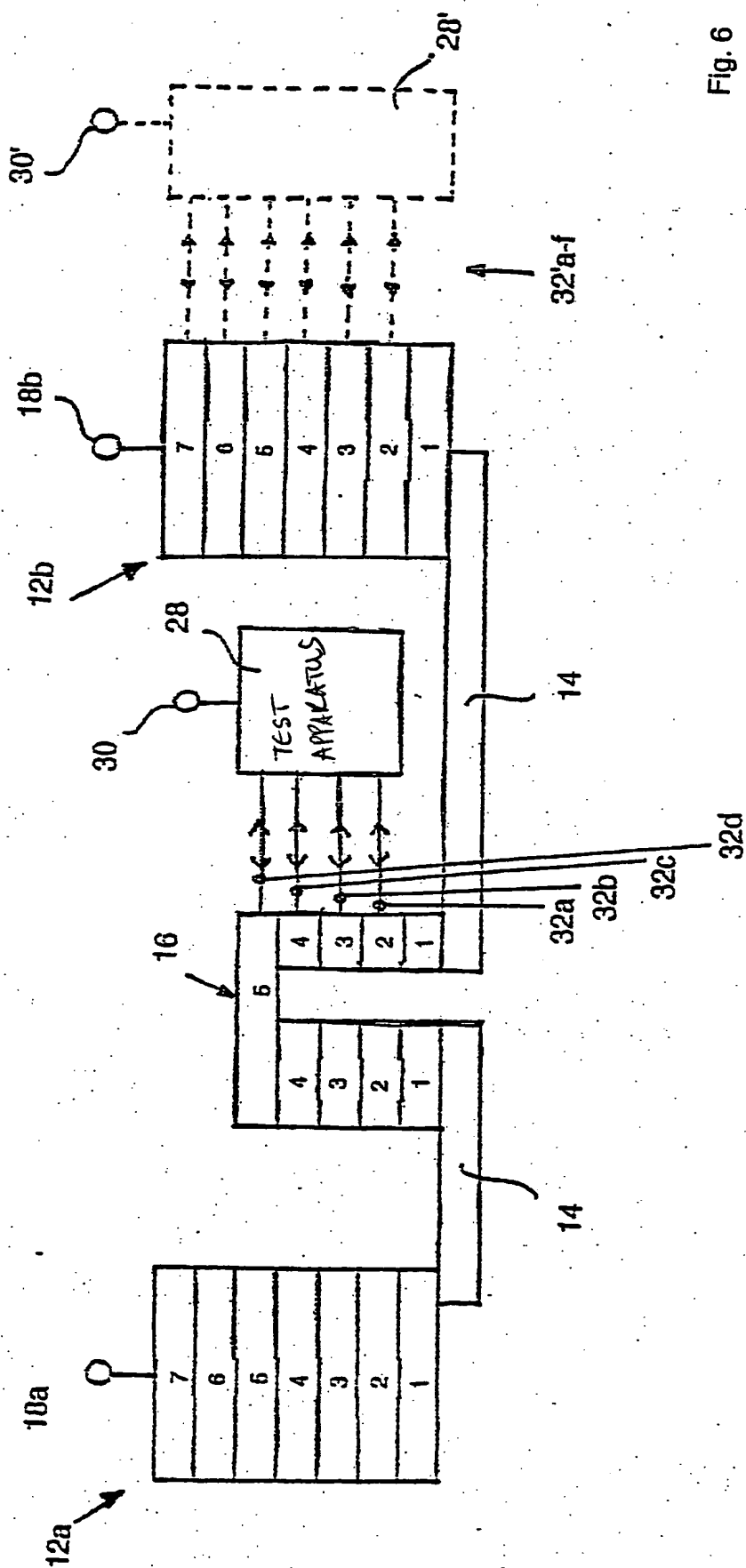


Fig. 6